



UNITED STATES PATENT AND TRADEMARK OFFICE



UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/056,269	01/24/2002	Kuang-Lieh Lu	08919-077001 / 13A-900601	8557
26161	7590	04/01/2004	EXAMINER	
FISH & RICHARDSON PC 225 FRANKLIN ST BOSTON, MA 02110			BERCH, MARK L	
			ART UNIT	PAPER NUMBER
			1624	

DATE MAILED: 04/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action

Application No.

10/056,269

Applicant(s)

LU ET AL.

Examiner

Mark L. Berch

Art Unit

1624

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 3/4/2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

- a) ☒ The period for reply expires 5 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
 - (b) ☐ they raise the issue of new matter (see Note below);
 - (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
 - (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____

3. ☒ Applicant's reply has overcome the following rejection(s): All except enablement.
4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: See memo.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☐ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: _____

Claim(s) objected to: 10,35 and 51.Claim(s) rejected: 23-29,31-34,36-50 and 52-54.

Claim(s) withdrawn from consideration: _____

8. ☐ The drawing correction filed on _____ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
10. ☒ Other: Note PTO-892

Mark L. Berch
Primary Examiner
Art Unit: 1624

DETAILED ACTION

The amendment is entered.

Claims 23-29, 31-34, 36-50, and 52-54 remain rejected under 35 U.S.C. 112, first paragraph. The traverse of this enablement rejection is unpersuasive. Applicants are claiming molecules with a certain stoichiometry, and also possessing a very specialized geometric arrangement of atoms. If a molecule does not have the specific hexagonal or tetragonal shape, it does not fall within the scope of the claim. Enablement cannot be seen for the scope of Z and T, the ligands. The actual hexagonal, and tetragonal supramolecules have some significant separation between the N atoms of the polydentate ligands. This would appear to be essential, both to forming a cavity, and because such a large number of bulky groups need some separation. But the claims do not require this in a ligand.

Applicants have argued that the specification only discloses ligands with "significant separation between the nitrogen atoms." But the claims have no such limitation. Nor is it clear how much separation is needed. The specification provides no actual guidelines on which ligands are suitable and which are not, other than the bare requirement that there be 4 or 6 ligating N atoms recited in the claim. It is by no means simple to determine whether a given ligand is intended, since the specification provides no guidance on this matter. Mere failure to prepare the complex is hardly an answer, since it is always possible that by varying the technique, the complex could be made after all. Even when one gets a complex, one cannot be sure that one has succeeded, or whether perhaps a complex with a different geometry has been obtained. The 6 ligands on pages 7-9 are, as applicants correctly state, just "exemplary ligands." They are just

Art Unit: 1624

examples, and do not limit the claims. For example, all have exactly four pyridine rings, all bound in the 4 position. All have at least two-fold symmetry. All have only C, H and N as elements. Surely one is not to read these as a requirements into the claims. The hexadentate ligands are even more restricted. All have exactly six pyridine rings as the sole heterocycles, and all have a hexasubstituted benzene ring in the center. At any rate, MPEP 2164.08 states, "Limitations and examples in the specification do not generally limit what is covered by the claims. When operativeness has been properly challenged, it is incumbent on applicant to limit the claims accordingly, cf. *In re Harwood*, 156 USPQ 673, *In re Cook*, 169 USPQ 298, *In re Langer*, 183 USPQ 288, *In re Corkill*, 226 USPQ 1005, 1009, and *In re Rainier*, 153 USPQ 802. MPEP 2164.08 states, "The Federal Circuit has repeatedly held that "the specification must teach those skilled in the art how to make and use the full scope of the claimed invention without undue experimentation'." *In re Wright*, 999 F.2d 1557, 1561, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993)."

Applicants have further argued that the hexagonal and tetragonal structure can be "confirmed by X-ray diffraction, IR and NMR." This argument is, in effect, a statement that the ligands which happen not to form such a complex are not to be understood as in the claim, even though they meet the claim requirement for Z or T. However, one cannot be sure that an X-ray can be obtained --- for example, the material might be amorphous. There is no specific IR or NMR signature for a tetragonal or hexagonal supramolecule. Thus, a critical feature --- the limitation on what ligands will and will not form these specialized complexes --- is not present, and an enablement

Art Unit: 1624

rejection is thus proper, *In re Mayhew*, 527 F.2d 1229, 1233, 188 USPQ 356, 358 (CCPA 1976).

To deal with these deficiencies, applicants have provided 4 references. However, none of these have the hexagonal or tetragonal structure required by the claims, or even anything similar. The hexagonal structure requires that a single ligand bind to 6 metals, and tetragonal requires that a single ligand bind to 4 metals. No paper shows such a structure. The hexagonal and tetragonal structure also requires that there be exactly two of these polydentate amine ligands, which line up parallel to each other. No paper shows such a structure. The hexagonal and tetragonal structure requires that each metal be bound to exactly one ligand. No paper shows such a structure. The hexagonal and tetragonal structure requires that the metals be in pairs, each pair connected by two bridging ligands. No paper shows such a structure of pairing, let along these bridging ligands.

Further, even if these were, the methods were not necessarily of any relevance here. Roche relied on a crystal structure to determine its form. The other three all relied on P^{31} -NMR on the P atoms attached to the metals. Such is not possible here. These compounds are not permitted to have P bound to the metals.

Accordingly, these references are of no value in enablement.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark L. Berch whose telephone number is 571-272-0663. The examiner can normally be reached on M-F 7:15 - 3:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mukund Shah can be reached on (571)272-0674. The fax phone numbers

Art Unit: 1624

for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0198.

A handwritten signature in black ink, appearing to read "Mark L. Berch". The signature is fluid and cursive, with the first name "Mark" and last name "Berch" clearly distinguishable.

Mark L. Berch
Primary Examiner
Art Unit 1624

3/30/04